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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/716,453	11/20/2003	Piero Melloni	2818-176	6639

23117 7590 07/22/2004
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EXAMINER

OH, TAYLOR V

ART UNIT PAPER NUMBER

1625

DATE MAILED: 07/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/716,453

Applicant(s)

MELLONI ET AL.

Examiner

Taylor Victor Oh

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 28-36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 28-35 is/are rejected.
- 7) ☒ Claim(s) 36 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☒ Certified copies of the priority documents have been received in Application No. 09/959,717.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 11/20/03.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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The Status of Claims

Claims 28-36 are pending.

Claims 1-27 have been canceled.

Claims 28-35 have been rejected.

Claim 36 has been objected.

DETAILED ACTION

Priority

1. In the Preliminary Amendment filed on 11/20/2003, claims 1-27 have been canceled and claims 28-36 have been newly added.

2. It is noted that the application is a division of 09/959,717 filed on 11/06/2001 (U.S. 6,677,476), which is a 371 of PCT/IT00/00187 dated on 05/12/2000 ; it is acknowledged that the copies of priority documents, Italy RM99A000310 (5/18/1999), Italy RM99A000670 (10/29/1999), and Italy RM2000A000061(2/10/2000), have been received.

Drawings

3. None.

Claim 36 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim Rejections - 35 USC § 103

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 28-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Frick et al (Synthesis, J. of Syn. Org. Chem. p.621-623).

Frick et al teaches the preparation of (S)-chlorosuccinic acid by converting (S)-aspartic acid with the treatment of sodium nitrite in hydrochloric acid (see page 621 ,lines 36-38).

Furthermore, the(S)-bromosuccinic acid reaction product similar to the (S)-chlorosuccinic acid has been exemplified below (see page 622 on the right col, lines 3-14) :

- a. mixing (S)-aspartic acid (0.38 mol) and KBr (1.74 mol) and sulfuric acid in the flask and cooling the mixture at -5°C ;
- b. adding a solution of NaNO_2 in water to the mixture and maintaining the temperature of the final mixture below 0°C ;
- c. isolating the desired product from the resultant mixture by extraction at -5°C .

The instant invention, however, differs from the prior art in that the claimed molar ratio range between aspartic acid and sodium chloride is from 1:0.3 to 1: 0.5 ; the claimed precipitation is conducted at a temperature from -10 to -20°C ; mother waters have been used as substitutes for sodium chloride and hydrochloric acid; washing water is also used in addition to mother waters.

With respect to the absence in teaching of the claimed molar ratio range between aspartic acid and sodium chloride, the Frick et al does indirectly indicate the molar ratio of 0.38 : 1.74 between aspartic acid and sodium chloride which can be estimated in view of the molar usages of the reactants, such as (S)-aspartic acid (0.38 mol) and KBr (1.74 mol) in the preparation of (S)-bromosuccinic acid reaction product. The claimed ranges and prior art do not overlap but are close enough that one skilled in the art would have expected them to have the same properties in the absence of an unexpected result. Therefore, it would have been obvious to the skilled artisan in the art to have optimized the prior art's molar ratio by routine experimentation in order to obtain the claimed molar ratio.

Regarding the precipitation temperature difference, the claimed ranges (–10 to –20⁰ C) and prior art (–5⁰ C) do not overlap but are close enough that one skilled in the art would have expected them to have the similar condition in the absence of an unexpected result. Furthermore, the limitation of a process with respect to ranges of pH, time and temperature does not impart patentability to a process when such values are those which would be determined by one of ordinary skill in the art in achieving optimum operation of the process. Temperature is well understood by those of ordinary skill in the art to be a result-effective variable, especially when attempting to control selectivity in a chemical process.

Concerning the additional use of the washing water and recycling the mother waters to be used for substitutes for sodium chloride and hydrochloric acid, the prior art is silent. However, these steps are directly related to the optimization of the known process in order to save the operational cost in the industrial process. Therefore, these claimed limitations have no patentable weight over the prior art procedure.

Frick et al expressly teaches the preparation of (S)-chlorosuccinic acid by converting (S)-aspartic acid in the presence of sodium nitrite in hydrochloric acid. Furthermore, the difference between the prior art and the claimed limitation with respect to the additional use of the washing water and recycling the mother waters for sodium chloride and hydrochloric acid can be considered as the obvious variations during the optimization process. Therefore, in order to bring down the cost of the operation in the industrial process, it would have been obvious to the skilled artisan in the art to have motivated to optimize the overall process by recycling the mother waters for sodium chloride and hydrochloric acid in the prior art process because the skilled artisan in the art would expect such a modification to be cost-effective for the industrial operation.

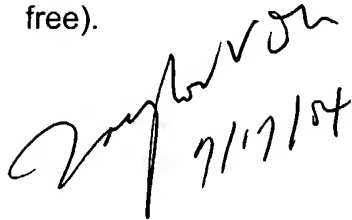
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Taylor Victor Oh whose telephone number is 571-272-0689. The examiner can normally be reached on 8:30-5:00.

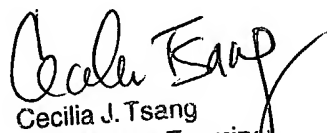
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tsang Cecilia can be reached on 571-272-0562. The fax

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phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

 7/17/04


Cecilia J. Tsang
Supervisory Patent Examiner
Technology Center 1600